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FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261
AUTH.NAME AUTHOR AFFILIATION
STIRLING,R.E. Carolina Power & Light Co.
FLANAGAN,W.J. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 93-013-00:on 930814,turbine runback occurred during performance of surveillance test.Caused by normal automatic equipment operation during runback.Tech Spec revised & control rods restored.W/930913 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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RNP/93-2253
(10CFR50.73)

United States Nuclear Regulatory Commission
Attn: Document Control Desk
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT NO. 93-013-00

Gentlemen:

The enclosed Licensee Event Report (LER), is submitted in accordance with 10 CFR 50.73 and NUREG 1022, Supplements No. 1 and 2.

Very truly yours,

W. J. Flanagan
Acting General Manager
H. B. Robinson S. E. Plant

RES:dwm

Enclosure

cc: Mr. S. D. Ebneter
Mr. W. T. Orders
INPO

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1/1

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
H. B. Robinson, Unit No. 2	05000 261	1 OF 3

TITLE (4)
TECHNICAL SPECIFICATION 3.10.1.3 IMPLEMENTATION DUE TO EXCEEDING ROD

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
08	14	93	93	-- 013 --	00	09	13	93		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER
	20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iv)	X	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		
	20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
RICHARD E. STIRLING, SENIOR SPECIALIST	(803) 383-1334

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On August 14, 1993, with H. B. Robinson Unit No. 2 operating at one hundred percent power, a turbine runback occurred during the performance of a surveillance test. Following the turbine runback, Technical Specification 3.10.1.3 was violated for a period of 5 minutes and 15 seconds due to exceeding control rod bank insertion limits as specified in the Core Operating License Report (COLR).

Control Rod Insertion limits were exceeded due to normal plant response to a turbine runback. No operator error or procedural problem occurred to cause this Technical Specification violation.

This event is reportable pursuant to 10 CFR 50.73(a)(2)(ii) as a condition that was outside the design basis of the plant.

NRC FORM 366A (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
H. B. ROBINSON, UNIT NO. 2	05000261	93	-- 013 --	00	2 OF 3

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

I. DESCRIPTION OF EVENT

On August 14, 1993, with H. B. Robinson Unit No. 2 operating at one hundred percent power, a turbine runback was initiated during the performance of a Nuclear Instrumentation Power Range surveillance test. Following the turbine runback, Technical Specification 3.10.1.3 was violated for 5 minutes and 15 seconds. Technical Specification 3.10.1.3 limits the insertion of control rod banks to that specified in the Core Operating License Report (COLR). The turbine runback caused automatic insertion of control rods. Within 2 minutes, boration was commenced to further reduce reactor power. Control rod bank D continued to insert automatically until the Senior Reactor Operator (SRO) noticed the LO-LO LEVEL ROD INSERTION LIMIT annunciator light was on and the Reactor Operator (RO) placed the rod banks into manual control to begin rod withdrawal after the plant had stabilized. During the investigation of plant response following the turbine runback, it was found that the rod insertion limit had been exceeded for a period of time during the event.

II. CAUSE OF EVENT

The cause of this Technical Specification violation is attributed to normal automatic equipment operation during the runback. No operator error or procedural problem contributed to the event.

III. ANALYSIS OF EVENT

During a "NIS Dropped Rod" runback, turbine power is decreased to ~70% power at a rate of 200%/minute. As turbine power is reduced, a deviation occurs between reactor reference temperature (Tref) and average reactor temperature (Tavg). Automatic Rod Control inserts control rods to decrease nuclear power to match Tavg to Tref. The rate of this control rod insertion is variable, depending upon the magnitude of the deviation between Tavg and Tref, and ranges between 8 steps/minute and 72 steps/minute. The control rod insertion rate during the transient was 60 to 66 steps per minute. This rate of control rod movement provided only approximately 14 seconds between the point at which the Lo Rod Insertion Limit alarm was received and the LO-LO Rod Insertion Limit alarm was received. In addition there was only approximately 6 seconds between receipt of the LO-LO Rod Insertion alarm and the time at which the Technical Specification Rod Insertion Limit was exceeded. A boric acid addition was started within 2 minutes after the start of the turbine runback, but this negative reactivity insertion requires approximately 6 minutes to effect a reduction in reactor power.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Discussions with Westinghouse revealed that violation of the Rod Insertion Limits during a turbine runback is not unexpected. Standard Technical Specifications for Westinghouse Pressurized Water Reactors (NUREG-1431) states that if the control banks are inserted beyond the Control Rod Insertion Limits, shutdown margin must be verified as being greater than 1.6% $\Delta k/k$ within 1 hour or initiate boration to restore shutdown margin to within limit within 1 hour and restore control bank(s) to within insertion limits within 2 hours. H. B. Robinson Technical Specifications have no such action statement.

The safety significance of this event has been evaluated by the Nuclear Fuels Section; this evaluation identified no safety concerns associated with this plant event. As stated in the Technical Specification Basis in Section 3.10, the control rod insertion limits:

1) provide the necessary shutdown margin upon a reactor trip;
2) limit the maximum inserted rod worth for a rod ejection accident, and;
3) provide for acceptable peaking factors.

The evaluation noted that the violation was brief and temporary. Calculations showed that the required shutdown margin was maintained. During the plant transient, as power was decreasing, the margin to the Technical Specification peaking factor was increasing and was not violated. The rod ejection accident is analyzed in UFSAR Chapter 15 at Hot Zero Power and Hot Full Power. A rod ejection accident at an intermediate power with rods being inserted would be less severe than the two analyzed cases. The evaluation also noted that technically, the rod insertion limits are violated each time a reactor scram from power occurs since control rods are fully inserted in <2 seconds while it takes approximately a minute for power to decay to 0% power.

IV. CORRECTIVE ACTION

A change to Technical Specification will be submitted to revise Technical Specification 3.10.1.3 and its basis to recognize that Control Rod Insertion Limits may be violated during a normal turbine runback event or plant scram. An action statement will be provided for restoring the control rods to within limits following any plant transient in which the insertion limits are violated.

V. ADDITIONAL INFORMATION

Previous Similar Events

None